PHILCO

REG. U.S. PAT. OFF

Service Bulletin — No. 197

Model 66

Model 66 is a five-tube superheterodyne radio receiver, capable of receiving either standard broadcasts (and police calls up to 1720 K.C.), or short-wave stations within a frequency range of 5.5 to 16.0 megacycles. The frequency range on standard broadcast is 540-1720 kilocycles.

The tubes used are: Type 6A7 detector-oscillator, type 78 intermediate frequency, type 75 2d detector, type 42 output and type 80 rectifier. The intermediate frequency of the Model 66 is 460 K.C. and the power consumption is 60 watts.

Tube Socket Voltages—Line Voltage 115

Tube	6A7	78	75	42	80
Circuit	Det. Osc.	I. F.	2d Det.	Output	Rect.
Filament (F-F).....	6.3	6.3	6.3	6.3	5.0
Plate (P-K).....	260	260	160	250	340
Screen (SG-K).....	85	85	...	260	...
Cathode (K-F).....	2.1	2.2	0	0	...

6A7-G1-K: 20; 6A7-G2-K: 130.

The above voltages were obtained by using a high resistance multi-range DC voltmeter, and an AC voltmeter for filaments. Tests made with test prods applied to tube sockets at underside of chassis (see Fig. 1). Volume control at maximum, dial at low frequency end of scale.

Power Transformer Data

Terminals	Volts	Circuit	Color of Leads
1-2	105-125	Primary	White
3-5	6.3	Filaments	Black
6-7	5.0	Filament of 80	Blue
8-10	680	Plates of 80	Yellow
4	...	Center Tap of 3-5	Black—Yellow Tracer
9	...	Center Tap of 8-10	Yellow—Green Tracer

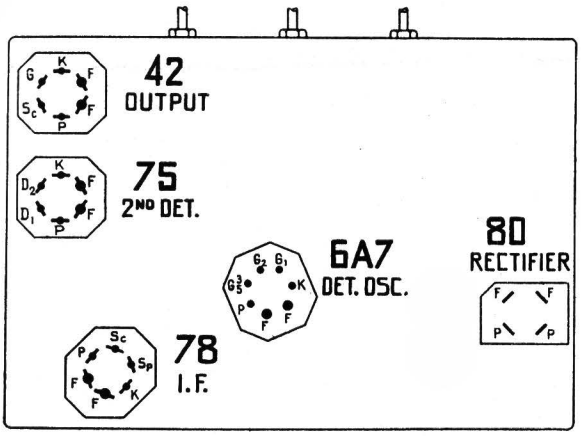

Fig. 1—Tube Sockets (Underside)

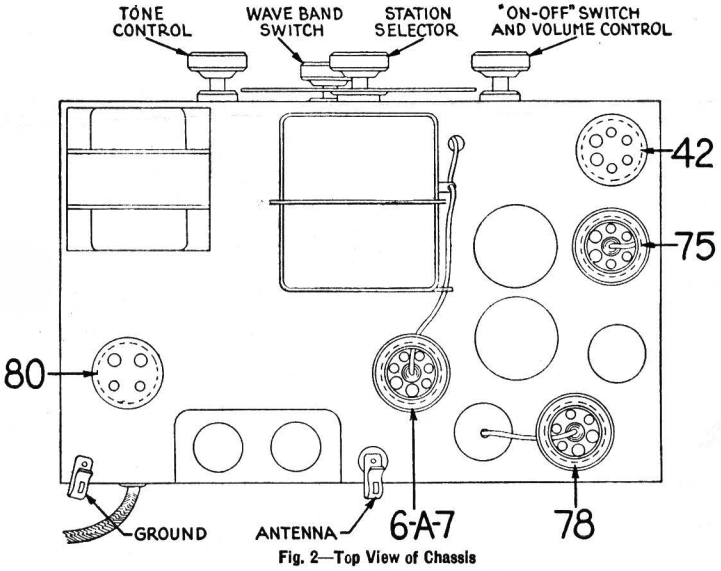

Fig. 2—Top View of Chassis

Adjusting Compensating Condensers

The adjustment of the compensating condensers in Model 66 Receiver requires the use of an accurate signal generator such as Philco Model 024, an efficient output meter (Philco Model 012 or Model 025 are recommended), and a suitable fibre hex wrench. Connect the output meter to the plate and cathode prongs of the 42 output tube.

Adjustments are made in the following order:

(1)—I. F. (Intermediate Frequency)—Remove grid clip from cap on 6A7 tube and connect antenna lead from signal generator to cap of tube. Connect ground lead to ground post on set. Turn on set and signal generator; set wave switch of latter to 460 K. C. (the I. F. of Model 66) and dial of set at 540, wave band switch to left. Adjust each of the four I. F. compensating condensers ⑰, ⑲, ㉒ and ㉔ in turn so that maximum reading is obtained in the output meter. If the meter reading goes off scale, adjust the attenuator on the signal generator so as to get a lower reading. These I. F. condensers (visible in Fig. 4) are adjusted by inserting the hex wrench thru the holes in rear of chassis sub-base (except one to extreme left when facing rear of set). Two of the holes are covered by small metal buttons which can be removed temporarily by hand.

(2)—WAVE TRAP—Replace grid clip on cap of 6A7 tube and connect antenna lead from signal generator to antenna post on set. Set signal generator at 460 K. C. and adjust wave trap ① so as to get MINIMUM reading in output meter.

(3)—ANT. and OSC. H. F.—These adjustments ⑦ and ⑪ are located on top of the tuning condenser assembly at right (facing front of set) and adjusted from above. The "ANT" ⑦ is nearest front of set. Set signal generator at 1700 and dial of set at 1700 and adjust these two condensers to get maximum output meter reading.

(4)—OSC. L. F.—This condenser ⑬ is located underneath chassis (see Fig. 4) and is reached from underneath. Set dial of set and signal generator switch at 600, and adjust for maximum reading.

PHILCO RADIO & TELEVISION CORPORATION
Service Department

June, 1934
Printed in U. S. A.

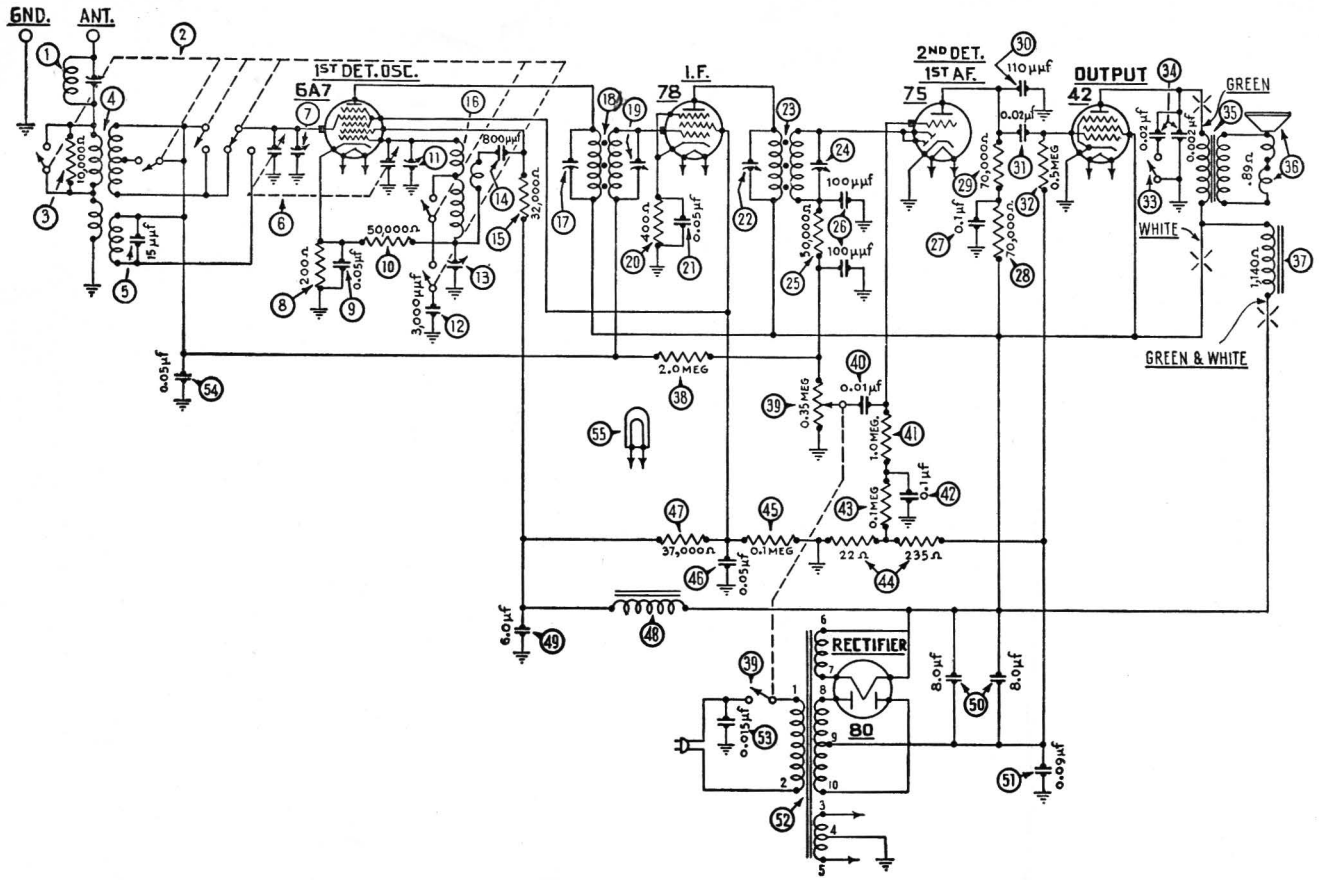

Fig. 3—Schematic Design

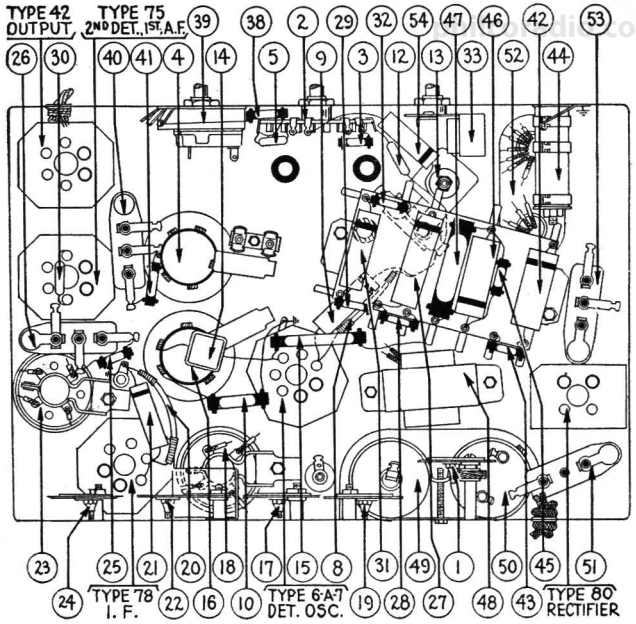

Fig. 4—Base View

Replacement Parts for Model 66

No. on Figs.	Description	Part No.	List Price
(1)	Wave Trap	38-5199	$0.30
(2)	Wave-band Switch	42-1066	.90
(3)	Resistor (10,000 ohms) (Brown-Black-Orange)	33-1000	.25
(4)	Antenna Transformer	32-1412	.85
(5)	Condenser (.000015 Mfd.)	30-1030	.35
(6)	Tuning Condenser Assembly	31-1231	3.65
(7)	Compensating Condenser (ANT)	Part of (6)	....
(8)	Resistor (200 ohms Flexible) (Red-Black-Brown)	7217	.20
(9)	Condenser (.05 Mfd. Tubular)	30-4020	.35
(10)	Resistor (50,000 ohms) (Green-Green-Orange)	6098	.25
(11)	Compensating Condenser (OSC. HF)	Part of (6)	....
(12)	Condenser (.003 Mfd. Mica)	30-1022	.60
(13)	Compensating Condenser (Osc. I. F.)	04000-S	.35
(14)	Condenser (.0008 Mfd. Mica)	5878	35
(15)	Resistor (32,000 ohms) (Orange-Red-Orange)	5279	.25
(16)	Oscillator Transformer	32-1413	.60
(17)	Compensating Condenser (1st I. F. Pri.)	04000M	.20
(18)	1st I. F. Transformer	32-1414	1.00
(19)	Compensating Condenser (1st I. F. Secondary)	04000M	.20
(20)	Resistor (400 ohms Flexible)	33-3016	.20
(21)	Condenser (.05 Mfd. Tubular)	30-4020	.35
(22)	Compensating Condenser (2d I. F. Primary)	04000M	.20
(23)	2d I. F Transformer	32-1415	$1.00
(24)	Compensating Condenser (2d I. F. Secondary)	04000J	.20
(25)	Resistor (50,000 ohms) (Green-Brown-Orange)	6098	.25
(26)	Condenser (.0001 Mfd. Twin Bakelite Block)	8035-B	.25
(27)	Condenser (.1 Mfd. Tubular)	30-4170	.35
(28)	Resistor (70,000 ohms) (Violet-Black-Orange)	33-1115	.25
(29)	Resistor (70 000 ohms) (Violet-Black-Orange)	33-1115	.25
(30)	Condenser (.00011 Mfd. Mica)	30-1006	.35
(31)	Condenser (.02 Mfd. Tubular)	30-4113	.30
(32)	Resistor (500,000 ohms) (Yellow-White-Yellow)	6097	.25
(33)	Tone Control	30-4192	.50
(34)	Condensers in Tone Control	Inside (33)	....
(35)	Output Transformer	32-7019	1.25
(36)	Voice Coil & Cone Assembly (S-12)	36-3014	.60
(37)	Field Coil and Pot. Assembly (S-12)	36-3341	2.75
(38)	Resistor (2 Megohms) (Red-Black-Green)	33-1025	.25
(39)	Volume Control and On-Off Switch	33-5006	1.45
(40)	Condenser (.01 Mfd.) (Bakelite Block)	3903-AB	.25
(41)	Resistor (1 Megohm) (Brown-Black-Green)	33-1096	.25
(42)	Condenser (.1 Mfd.)	30-4122	.35
(43)	Resistor (.1 Meg.) (White-White-Orange)	6099	.25
(44)	Resistor (B. C. Wire-wound) (22, 235 ohms)	33-3037	.20
(45)	Resistor (.1 Meg.) (White-White-Orange)	6099	$0.25
(46)	Condenser (.05 Mfd. Tubular)	30-4123	.35
(47)	Resistor (37,000 ohms) (Orange-Violet-Orange)	33-1098	.35
(48)	Filter Choke	32-7018	1.50
(49)	Condenser (Electrolytic—6 Mfd.)	30-2021	1.55
(50)	Condenser (Electrolytic—8-8 Mfd.)	30-2028	2.40
(51)	Condenser (.09 Mfd. Bakelite Block)	4989-D	.35
(52)	Power Transformer	8046	3.45
(53)	Condenser (.015 Mfd. Bakelite Block)	3793-W	.35
(54)	Condenser (.05 Mfd. Tubular)	30-4020	.35
(55)	Dial Light	6608	.11
	Four Prong Socket	7544	.10
	Six Prong Socket	7547	.11
	Seven Prong Socket	27-6005	.11
	Tube Shield	28-1107	.10
	Chassis Mounting Screw	W-567	3.00C
	Chassis Mounting Washer (Metal)	W-315	.50C
	Chassis Mounting Washer (Rubber)	5189	.04
	Knob (Large)	27-4051	.10
	Knob (Small)	27-4052	.10
	Dial Assembly	31-1234	.30
	Dial Scale	27-5057	.10
	A. C. Cord and Plug Assembly	L-943A	.60